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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-------------------------|-------------|------------------------|---------------------|------------------|
| 10/675,751 | 09/30/2003 | Jimmie Earl DeWitt JR. | AUS920030482US1 | 8000 |
| 35525 | 7590 | 05/31/2006 | EXAMINER | |
| IBM CORP (YA) | | | CODY, DILLON J | |
| C/O YEE & ASSOCIATES PC | | | | |
| P.O. BOX 802333 | | | ART UNIT | |
| DALLAS, TX 75380 | | | 2183 | |
| | | | PAPER NUMBER | |

DATE MAILED: 05/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|-------------------------------|-------------------------------|--|
| Office Action Summary | Application No. 10/675,751 | Applicant(s) DEWITT ET AL. | |
| | Examiner Dillon J. Cody | Art Unit 2183 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 May 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>1/9, 30, 2/14, 5/2</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-25 are pending.

Papers Filed

2. Examiner acknowledges receipt of amended claims, amended specification, and information disclosure statement, all filed 2 May 2006; information disclosure statement filed 14 February 2006; information disclosure statement filed 30 January 2006; information disclosure statement filed 9 January 2006.

New Rejections

Specification

3. The amendment filed 2 May 2006 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: Striking the disclosure of transmission-type media on pages 64-65

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

5. Claims 1-25 are rejected under 35 U.S.C. 102(a) as being anticipated by Davidson et al. (U.S. Patent No. 6,574,727) hereinafter referred to as Davidson.

6. As per claim 1, Davidson discloses a method in a data processing system for monitoring processing of instructions, the method comprising:

receiving an instruction at a processor for execution; (Col. 8 lines 58-60)

responsive to a determination of being in an enabled state to perform a selected action, (Col. 11 lines 35-55) *The examiner asserts that the "OK to Sample Signal" (Fig. 6 signal 642) indicates that the processor is in an enabled state to perform an action specified by the MMCR.*

determining whether the instruction is associated with an indicator stored in a shadow memory; (Col. 8 line 65 – col. 9 line 8), the shadow memory comprising a storage area separate from an instruction storage area in which the instruction is stored; *The examiner asserts that the value to be matched is stored in the MMCR, as described in col. 4 line 9 – col.5 line 30. Since the MMCR is implemented as a register on chip (col. 4 line 21), the value to be compared to is NOT stored in an instruction storage area and, hence, constitutes shadow memory.*

and performing the selected action in response to the indicator being associated with the instruction. (Col. 8 lines 30-36)

7. As per claim 2, Davidson discloses the method of claim 1, wherein the instruction is received in an instruction cache (Fig. 4 instruction cache 406) and further comprising:

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executing the instruction after receiving the instruction for execution. *Examiner asserts that the instruction is executed, as indicated by the arrow entering execution unit 480 in fig. 4.*

8. As per claim 3, Davidson discloses the method of claim 1, wherein the determination of being in an enabled state comprises: examining a register in the processor; and determining whether the register is set to indicate the enabled state. (Col. 11 lines 37-55)

9. As per claim 4, Davidson discloses the method of claim 1, wherein the selected action includes at least one of

sending the instruction to a performance monitor unit (Col. 8 lines 30-36),

sending the instruction to a data cache, *The examiner asserts that all instructions are sent to instruction cache 256 (Fig. 2) and that all instructions constitute data.*

and sending the instruction to an interrupt unit.

10. As per claim 5, Davidson discloses the method of claim 1, wherein the instruction is received in a bundle. (Col. 9 lines 22-25)

11. As per claim 6, Davidson discloses the method of claim 1, wherein the enabled state is enabled by setting a register in a processor. (Col. 11 lines 35-55)

12. As per claim 7, Davidson discloses the method of claim 1, wherein the shadow memory contains debugging information. (Col. 7 line 59-61)

13. As per claim 8, Davidson discloses a method in a data processing system for monitoring access to data during execution of instructions by a processor, the method comprising:

responsive to a determination of being in an enabled state to perform a selected action when a data access to a memory location occurs, determining whether the memory location is associated with an indicator stored in a shadow memory; (Col. 4 lines 18-20) the shadow memory comprising a storage area separate from the memory location in which data is stored; *The examiner asserts that the value to be matched is stored in the MMCR, as described in col. 4 line 9 – col.5 line 30. Since the MMCR is implemented as a register on chip (col. 4 line 21), the value to be compared to is NOT stored in the data storage area and, hence, constitutes shadow memory. The examiner asserts that if the “sample” bit is set, the performance monitor will determine if the read/write operation references a memory location in question, stored in a MMCR.*

and performing the selected action in response to the indicator being associated with the memory location. (Col. 4 lines 30-35)

14. As per claim 9, Davidson discloses the method of claim 8, wherein the selected action is at least one of forcing an interrupt and counting accesses to the memory

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location. (Col. 4 lines 30-35 and Col. 5 lines 8-16) *The examiner asserts that the PMC1 is configurable to count memory accesses.*

15. As per claim 10, Davidson discloses the method of claim 8, wherein the shadow memory includes a shadow word for each word of data. *The examiner asserts that in any memory, a word of data requires at least a word of memory space to store said data. Storing a word of data in a memory location with fewer than a word of memory will cause portions of the data to be lost, causing undesired operation.*

16. As per claim 11, Davidson discloses the method of claim 8, wherein the determination of being in an enabled state comprises: examining a register in the processor (Fig. 6 sample bit 648); and determining whether the register is set to indicate the enable state. *The examiner asserts that if the sample bit is not set, the instruction associated with it is ignored by the performance monitor.*

17. Claims 12-18 are directed to a data processing system implementing the methods of claims 1, 3-5 and 8-10 and are rejected under the same grounds as stated above.

18. Claims 19-25 are directed to a computer program product implementing the methods of claims 1, 3-5 and 8-10 and are rejected under the same grounds as stated above.

Maintained Rejections

19. Applicant has failed to overcome the rejections set forth in the previous Office Action. Consequently, these rejections are respectfully maintained by the examiner and are copied below for applicant's convenience.

Claim Rejections - 35 USC § 101

20. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

21. Claims 19-25 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Pages 64-65 of the specification define "computer readable media" to include "transmission-type media". Transmission media are not tangible, and hence, non-statutory. *The examiner notes that the amendment to the specification filed 2 May 2006 has NOT been entered, as it constitutes new matter. In order to overcome this rejection, the examiner recommends amending claims 19-25 to read "A computer program product in a computer readable recordable-type medium..."*

Response to Arguments

22. Objections to the title and claims 9, 17 and 23 have been withdrawn in favor of amendments filed 2 May 2006.

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23. Applicant's arguments filed on 2 May 2006 have been fully considered but they are not persuasive.

24. Applicant argues the novelty/rejection of claim 1 on pages 10-11 of the remarks, in substance that:

"Davidson, as described above, teaches that instructions are identified by their opcode and/or extended opcode by matching the fetched instructions against selected opcodes. Davidson does not disclose, either in the above recitation, or elsewhere in the patent, that an indicator with which an instruction is associated is stored in a shadow memory that comprises a storage area separate from an instruction storage area in which the instruction is stored as now recited in claim 1. Although the Examiner asserts that the value to be matched must be stored in some sort of memory in order to be retained, the reference does not disclose or suggest that a value to be matched is stored in a shadow memory that comprises a storage area separate from an instruction storage area in which the instruction is stored as required by claim 1."

25. These arguments are not found persuasive for the following reasons:

- a. Regardless of what is compared to determine if an instruction is to be sampled (be it opcode or not), the value the instruction is *compared to* is stored in the MMCR (col. 4 line 9 – col.5 line 30). This value in the MMCR is "associated" with the instruction simply by matching the opcode encoded in the instruction.
- b. The indicator associated with the instruction to be sampled is stored in the MMCR (col. 4 line 9 – col.5 line 30), which as disclosed by Davidson, is a register in the processor. Since it is not stored in instruction memory, the MMCR constitutes shadow memory.

Conclusion

26. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

27. The following is text cited from 37 CFR 1.111(c): In amending in reply to a rejection of claims in an application or patent under reexamination, the applicant or patent owner must clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. The applicant or patent owner must also show how the amendments avoid such references or objections.

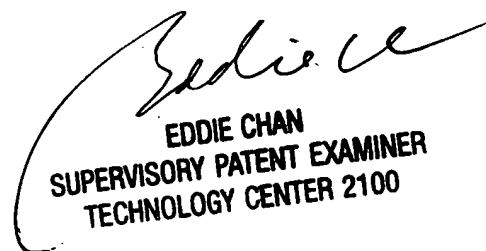
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dillon Cody whose telephone number is 571-272-8401. The examiner can normally be reached on Mon - Fri, 8 AM - 5 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Chan can be reached on 571-272-4162. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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